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(54) Title: TISSUE-ENGINEERED VASCULAR STRUCTURES

(57) Abstract: The present invention is directed to novel, less invasive and improved methods of tissue-engineering of constructs that require an endothelial surface such as blood vessels and heart valves. The constructs of the present invention possess long-term patency. The method of the present invention is particularly suited for making small diameter vessels to replace clogged or damaged coronary blood vessels, for making trileaflet heart valve conduits to replace damaged or malformed pulmonic and aortic valves, and for other vascular structures that require an endothelial surface.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/48946

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61F 2/06, 2/36

US CL : 623/1.38, 1.41, 1.42, 1.43, 2.12, 2.13, 2.14, 2.15, 2.16, 23.64, 23.72, 23.73, 23.74, 23.75, 23.76

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 623/1.38, 1.41, 1.42, 1.43, 2.12, 2.13, 2.14, 2.15, 2.16, 23.64, 23.72, 23.73, 23.74, 23.75, 23.76

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| Y | US 5,290,271 A (JERNBERG) 01 March 1994 (01.03.1994), col. 3, lines 29-43 and col. 7, lines 12-19 | 1-10 |
| Y | US 5,880,090 A (HAMMOND et al.) 09 March 1999 (09.03.1999), col. 4, lines 60-67 and col. 5, lines 52-65. | 1-10 |

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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